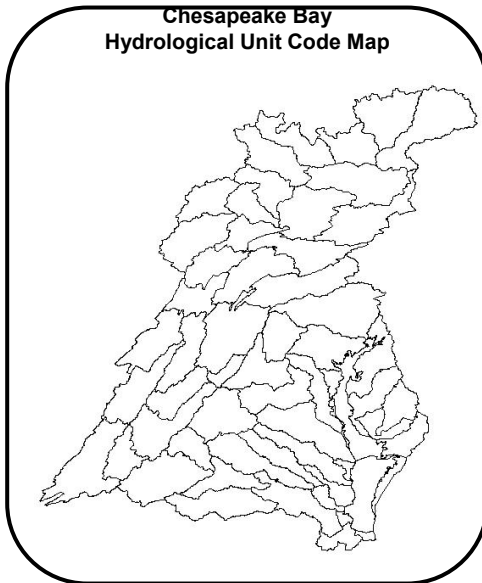


Health of the Chesapeake Bay Watershed

Name: _____

Partners Name: _____

Instructions: Click on [Healthy Chesapeake?](#) This will load the ArcIMS viewer into your web-browser with the Health of the Chesapeake Bay Watershed data in layers. *Click Refresh map when adding or removing layers.



1. Check 'States' and list the states the Chesapeake Bay Watershed covers.

(abv) _____

2. Do you live in the Chesapeake Bay Watershed? _____. Check 'Counties' then use the zoom icon to zoom in on your county.

3. Large watersheds regions are divided into smaller categories and these are given names. Check and activate 'H.U.C.'s' and use the identify icon to fill in the blanks below for your county.

_____ ion _____ County is part of the

Region Name

Mid-Atlantic Reg

Sub-Region Name(s)

Accounting Unit Name(s)

Hydrological Unit Name(s)

4. Using the map above on this worksheet shade in the Hydrological Units(s) that are located in your county.

5. Check and activate the 'Dams' theme. Are there any major dams located in your county? _____. Use the identify icon and list one closest dams name and owner. Name: _____ Owner: _____.

Instructions for #6-7: Activate 'Chesapeake Bay Watershed' and then click the zoom to activate theme icon. Uncheck 'Dams' and 'Counties'. Circle the best answer in each sentence. Remember to click Refresh Map for ArcIMS.

6. Check the 'Annual Precipitation' theme. The mountainous regions of the Chesapeake Bay watershed (western area) area typically average [**more** / **less**] rainfall than the plains (eastern area). Then uncheck 'Precipitation'.

7. Check the 'Dense Urban Areas', 'Urban Areas', and 'Parks' themes. The majority of the population in the Chesapeake Bay watershed is located in the [**eastern** / **western**] area where as the most of the land designated park land is located in the [**eastern** / **western**] area. Once answered uncheck these three themes. Refresh map ArcIMS users.

Instructions for #8: A. Individually check and uncheck the 4 themes titled 'Landuse * by Percent'. Observe patterns as you do this. **B.** Then activate one of these four themes and use the identify icon and click on a Hydrological Unit that was in your county. When the results box appears scroll down and use this information to fill in the box to the right labeled '8. Your Hydrological Unit'.

9. The two areas with the highest percentage from #8 in your sub-watershed are _____.

10. Compare your percentage in each category from #8 to the other sub-watersheds in the Chesapeake Bay watershed. Rank yours on a scale of High Average Low. Do this by just checking and unchecking each theme, comparing your color gradient to the other hydrological units, and then circling **H** for High, **A** for Average, and **L** for Low located in the table to the right labeled **H A L**.

8. Your Hydrological Unit

Name: _____

These numbers indicate what percentage of the hydrological unit area is...

Agriculture - _____% H A L

Forest - _____% H A L

Water - _____% H A L

Urban - _____% H A L

Other - _____% H A L

Note: In 1997 the Environmental Protection Agency developed a better way to assess watersheds. The Index of Watershed Indicators started with 15 'data layers', seven monitoring the **quality** of aquatic resources and eight monitoring the **vulnerability**. They are currently working on adding more.

***Instructions for Back of Worksheet #11-13: A.** You have all 15 'data layers' themes for the Chesapeake Watershed plus a few more in ArcView. Your job as a group is to pick a new Hydrological Unit and using the 15 'data layers' characterize its water quality and vulnerability. This will not be easy but you may use the chart on the back to assist you. **B.** Once you have investigated and agreed upon one of the characterizations on the back of this page take your answer to your teacher and he/she will inform you how the EPA assessed the hydrological unit.

11. What is the name of the hydrological unit you have chosen as a group? _____.
12. Name the state(s) this unit is located in. _____.

Note: Use these charts to assist you in assessing the water quality and vulnerability for your watershed. Develop your own scale and then use that to decide which overall characteristic you would rank your hydrological unit.

The Water Quality Indicators

Assessed Rivers, Lakes, and Estuaries Meeting All Designated Uses	<input type="text"/>
Fish Consumption Advisories	<input type="text"/>
Indicators of Source Water Conditions	<input type="text"/>
Contaminated Sediments	<input type="text"/>
Ambient Water Quality (Toxic)	<input type="text"/>
Ambient Water Quality (Conventional)	<input type="text"/>
Wetland Loss Index	<input type="text"/>

From your analysis how would you grade the hydrological unit you chose for water quality? Circle one of the three.

Better Water Quality

Less Serious Water Quality Problems

More Serious Water Quality Problems

The Water Vulnerability Indicators

Aquatic / Wetland Species At Risk	<input type="text"/>
Toxic Loads Over Permitted Limits	<input type="text"/>
Conventional Loads Over Permitted Limits	<input type="text"/>
Urban Runoff Potential	<input type="text"/>
Agricultural Runoff Potential	<input type="text"/>
Population Change	<input type="text"/>
Hydrologic Modification Caused by Dams	<input type="text"/>
Estuary Pollution Susceptibility Index	<input type="text"/>

From your analysis how would you grade the hydrological unit you chose for water vulnerability? Circle one of the two.

Low Vulnerability

High Vulnerability

13. Check your answer with your teacher. Did the EPA characterize your hydrological unit the same way you did? _____.
14. Soil Permeability measurements are be considered for use as an indicator by the EPA. How do you think it will assist them in their assessments of watersheds? _____.

Instructions: A. Individually you are going to create two maps with legends for printing. Your teacher will instruct you how to go about creating these maps. However you must have an idea as to what you will have these maps display. Your first map must have the entire Chesapeake Bay watershed visible. Write down in the box to the right three to five themes you want your map to display. Remember you can practice what it might look like by clicking the print icon in ArcIMS.

Instructions: B. Your second map must display the sub-watershed you chose to investigate for water quality and vulnerability. Write down two to five themes you want displayed in this map in the box to the left.

***Attached printed maps to this worksheet.**